

Pub. C1
a rotor position estimator which estimates a magnetic pole position of a rotor of said synchronous motor based on electrical quantities in relation to electric power supplied to said synchronous motor,

a mobile body position estimator which estimates the position of said mobile body based on the magnetic pole position estimated by said rotor position estimator, and

a motor speed command generator which controls the speed of said synchronous motor based on the position command and the position of said mobile body estimated by said mobile body position estimator.

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Please add new claims 17-18 as follows:

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17. (new) A controller for a mobile body driven by a synchronous motor, the controller comprising:

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a rotor position estimator which estimates a magnetic pole position of a rotor of said synchronous motor based on electrical quantities in relation to electric power supplied to said synchronous motor; and

a mobile body position estimator which estimates the position of said mobile body based on the magnetic pole position estimated by said rotor position estimator, the estimated position being usable to control the mobile body.

18. (new) A method of controlling a mobile body driven by a synchronous motor comprising the steps of:

estimating a magnetic pole position of a rotor of said synchronous motor based on electrical quantities in relation to electric power supplied to said synchronous motor, and

estimating the position of said mobile body based on said magnetic pole position estimated in the previous step, the estimated position being usable to control the mobile body.

(Applicants' remarks are set forth herein below starting on the following page).